

CLAIMS

What is claimed is:

1. A rotary apparatus adapted to perform as, compressor, pump, motor or an internal
5 combustion engine; said apparatus comprising of two vanes, two hollow cylindrical sleeves,
hollow cylindrical liner, cams and associated linkages, coupling, shaft, clutch and
braking/locking arrangement; said vanes are fitted on to the curved surface of the sleeves, one
vane on each sleeve, such that the vanes are radial to sleeve's curved surface and at one of the
ends of each sleeve; said vanes are so fitted that the vane's surface protrudes out of the sleeve's
10 end; said sleeves placed such that their ends, fitted with vanes are placed adjacent, with the
vanes angularly displaced; said vanes are displaced from each other by a defined angle at all
times; said sleeves so placed that their axis, the one passing through the center of their end
surfaces, lay on one line; said surfaces where the vanes are attached on the sleeves, is such that
it allows rotation of the adjacent vane and sleeve fitting, about the said axis; said vanes are
15 placed inside a liner; said liner along with the sleeve surface forms an enclosure; said liner's
inner surface is contoured along the path traced by vane edge while rotating about the said axis;
said inner surface allows rotation of the vanes about the said axis; said vanes divide the said
enclosure formed inside the liner into two sealed chambers; said enclosure is sealed from
spaces outside the enclosure; said two sleeves, are coupled and uncoupled with a shaft by
20 means of coupling arrangement actuated by cams or other timing devices; said cams or timing
devices are dependent on sleeve position; said cams or timing devices actuate said
braking/locking arrangements such that each vane is held at a predetermined position
alternately, and the vanes are free to rotate through an defined angle alternately; said cams ore
timing devices allow both vanes to rotate simultaneously through an predefined angle; said
25 cams or timing devices defines the angle by which the vanes are separated, rotated
simultaneously or independently in a pattern as described in the complete specification.
2. A rotary apparatus as claimed in claim 1 in which the vane are so fitted that only one
the vane's surface protrudes out of the sleeve's end.

3. A rotary apparatus as claimed in claim 1 in, which the said shaft is external to the sleeves so that the sleeves are not hollow.

4. A rotary apparatus as claimed in claim 1 in, which the said sleeves are driven by or drive a shaft by coupling arrangements through a gearing arrangement.

5 5. A rotary apparatus as claimed in claim 1 in which the sleeve end surfaces adjacent to each other are provided with sealing elements forming a continuous sealing line around said end surfaces blocking a leakage flow as practically possible.

6. A rotary apparatus as claimed in claim 1 in which said vanes are provided with sealing elements blocking a leakage fluid flow across the vane edges and liner inner surface as
10 practically possible.

7. A rotary apparatus as claimed in claim 1 in which sealing arrangements are placed at the liner and sleeve interface blocking a leakage fluid flow across the said liner and sleeve interface as practically possible.

8. A rotary apparatus as claimed in claim 1 in which said enclosure formed within the liner
15 and vanes is communicated or sealed to spaces outside the enclosure.

9. A rotary apparatus as claimed in claim 8 in which the communicating device or flow regulating devices such as valves, is so placed, operated and, or timed, such that the apparatus be used as a compressor, motor, pump or a metering device.

10. A rotary apparatus as claimed in claim 8 wherein means are provided for addition or
20 removal of heat and, or other forms of energy, between spaces within, outside the said enclosure formed by the liner and vanes.

11. A rotary apparatus as claimed in claim 10 wherein the communicating devices and, or means of energy addition and removal are so placed, operated and, or timed, such that the apparatus be used as a prime mover like an internal combustion engine.

25 12. A rotary apparatus as substantially as herein described with reference to figures of accompanying drawings.